WY 2003/2004 EWA Accounting Summary

Based upon April Operations Study - 90% Exceedance Hydrology

	Assumption	is: SWP	Allocatio	on - 65%;	NOD Pu	TUTIASES	- 160 IA	F; SOD	Purchas	ses - 84 I	AF; MW	D 55 - 4	5 IAF				
			EW	VA NOD a	nd SOD Sto	orage ((+ =	= Acquisi	ions) an	d (- = Rele	eases))							
	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	To
OD (Oroville) 0	0.398					-0.398 ³											
DD (YCWA/PCWA)										160 ^{4 5}	-53 ^{4 5}	-53 ^{4 5}	-53 ^{4 5}				
Carriage Water Loss ²										100	-11	-11	-11				1
OD (KCWA/SCVWD)	-								84 ⁶	-30 ⁶	-30 ⁶	-24 ⁶	-11				1
,	-								04	-30	-30	-24					+
OD (MWD)																	
		-			EWA Asse	t Acquisit	ion in SV	/P San L	uis								
	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	To
I Relaxation																	
WA share of SWP gain																	
roject Pumping to reduce EWA debt																	
POD using excess flows																	
POD using NOD storage																	
fer NOD - Sacramento River ²											19 ^{4 5}	19 ^{4 5}	19 ^{4 5}				1
	-										19	19	19				+
fer NOD - San Joaquin River 2	I											. 6			!		1
OD SWP Surface/GW Purchases	L									30 ⁶	30 ⁶	24 ⁶			<u> </u>		_
xchange of EWA assets															<u> </u>	<u></u>	L
Groundwater pumping SOD																	
exchange from CVP to SWP in SL																	1
otal Monthly EWA Assets	+	0	0	0	0	0	0	0	0	30	49	43	19	0	0	0	٠
otal Monthly LWA Assets			U	0	0	0	0	U		30	43	43	13				-
					EWA Ass												
	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	T
/I Relaxation																	
roject Pumping to reduce EWA debt							0.202										
POD using excess flows																	
	-	-									24 4 5	24 4 5	24 4 5				1
POD using NOD storage	\vdash										24	24	24				+
fer NOD - Sacramento River 2																	<u> </u>
fer NOD - San Joaquin River ²																	
OD CVP Surface/GW purchases																	
xchange of EWA assets																	
Groundwater pumping																	
Exchange from SWP to CVP in SL																	1
otal Monthly EWA Assets	0	0	0	0	0	0	0	0	0	0	24	24	24	0	0	0	t
•				•	•	•				•					•		
	C/O	Oct	Nov	Dec	Jan	enditures Feb	at the Ex	oort Pum Apr	n ps May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Lτ
								-12 ⁷	-80 ⁷	-50							Ė
WP export cuts										-30							-
•																	
VP export cuts									-71 ⁸								
VP export cuts	0	0	0	0	0	0	0	-12		-50	0	0	0	0	0	0	
VP export cuts	0	0	0					-12	-71 ⁸ - 152	-50	0	0	0	0	0	0	
VP export cuts				EW	A End-of-M	lonth Incre	emental S	-12 storage C	-71 ⁸ -152 Changes								
WP export cuts VP export cuts otal Expenditures	C/O	Oct	Nov	EW /	A End-of-M Jan	lonth Incre Feb	emental S Mar	-12 Storage C	-71 ⁸ -152 Changes May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	 T
CVP export cuts otal Expenditures WP in SL (without Source Shift)	C/O 0.057	Oct 0	Nov 0	EW/ Dec 0	A End-of-M Jan 0	Ionth Incre Feb	emental S Mar 0	-12 Storage C Apr -12	-71 ⁸ -152 Changes May -80	Jun -20	Jul 49	Aug 43	Sep 19	Oct 0	Nov 0	Dec 0	
VP export cuts otal Expenditures WP in SL (without Source Shift) VP in SL	C/O 0.057 -0.202	Oct 0 0.000	Nov 0 0.000	Dec 0 0.000	A End-of-M Jan 0	Feb 0	emental S Mar 0	-12 Storage C Apr -12 0	-71 ⁸ -152 Changes May -80 -71	Jun -20	Jul 49 24	Aug 43 24	Sep 19 24	Oct 0	Nov 0 0	Dec 0 0	_
VP export cuts otal Expenditures WP in SL (without Source Shift) VP in SL OD Storage	C/O 0.057 -0.202 0.398	Oct 0 0.000 0	Nov 0 0.000	Dec 0 0.000 0	A End-of-M Jan 0 0.000	0 0 0.000 -0.398	emental S Mar 0 0.202	-12 Storage C Apr -12 0	-71 ⁸ -152 Changes May -80 -71	Jun -20 0 160	Jul 49 24 -53	Aug 43 24 -53	Sep 19 24 -53	Oct 0 0 0	Nov 0 0 0	Dec 0 0 0	
VP export cuts otal Expenditures WP in SL (without Source Shift) VP in SL OD Storage OD Storage (non-S.L.)	C/O 0.057 -0.202 0.398 0.000	Oct 0 0.000 0	Nov 0 0.000 0	Dec 0 0.000 0 0	A End-of-M Jan 0 0.000 0	Teb 0 0.000 -0.398 0	emental S Mar 0 0.202 0	-12 Storage C Apr -12 0 0	-71 ⁸ -152 Changes May -80 -71 0 84	Jun -20 0 160 -30	Jul 49 24 -53	Aug 43 24 -53 -24	Sep 19 24 -53 0	Oct 0 0 0 0	Nov 0 0 0 0 0	Dec 0 0 0 0 0	_
VP export cuts chal Expenditures WP in SL (without Source Shift) VP in SL DD Storage DD Storage (non-S.L.)	C/O 0.057 -0.202 0.398	Oct 0 0.000 0	Nov 0 0.000	Dec 0 0.000 0	A End-of-M Jan 0 0.000	0 0 0.000 -0.398	emental S Mar 0 0.202	-12 Storage C Apr -12 0	-71 ⁸ -152 Changes May -80 -71	Jun -20 0 160	Jul 49 24 -53	Aug 43 24 -53	Sep 19 24 -53	Oct 0 0 0	Nov 0 0 0	Dec 0 0 0	
VP export cuts otal Expenditures WP in SL (without Source Shift) VP in SL OD Storage OD Storage (non-S.L.)	C/O 0.057 -0.202 0.398 0.000	Oct 0 0.000 0	Nov 0 0.000 0	EW/ Dec 0 0.000 0 0	A End-of-M Jan 0 0.000 0 0	Nonth Increase	emental S Mar 0 0.202 0 0	-12 Storage C Apr -12 0 0 0 -12	-71 ⁸ -152 Changes May -80 -71 0 84 -68	Jun -20 0 160 -30	Jul 49 24 -53	Aug 43 24 -53 -24	Sep 19 24 -53 0	Oct 0 0 0 0	Nov 0 0 0 0 0	Dec 0 0 0 0 0	
VP export cuts otal Expenditures WP in SL (without Source Shift)	C/O 0.057 -0.202 0.398 0.000	Oct 0 0.000 0 0 0 0	Nov 0 0.000 0 0	EW/ Dec 0 0.000 0 0	A End-of-M Jan 0 0.000 0		emental S Mar 0 0.202 0 0 0	-12 Storage C Apr -12 0 0 0 -12 e at Vari	-71 ⁸ -152 Changes May -80 -71 0 84 -68 ous Sites	Jun -20 0 160 -30	Jul 49 24 -53	Aug 43 24 -53 -24	Sep 19 24 -53 0	Oct 0 0 0 0 0 0 0	Nov 0 0 0 0	Dec 0 0 0 0 0	
VP export cuts otal Expenditures WP in SL (without Source Shift) VP in SL OD Storage OD Storage (non-S.L.) otal Incremental Storage Changes	C/O 0.057 -0.202 0.398 0.000 0.253	Oct 0 0.000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nov 0 0.000 0 0 0 0	EW/ Dec 0 0.000 0 0 0	A End-of-M Jan 0 0.000 0 0 0 End-of-Mo Jan	Onth Incre Feb	emental S Mar 0 0.202 0 0 0 0 0 0 Mar	-12 Storage C Apr -12 0 0 0 -12 c at Vari	-71 ⁸ -152 Changes May -80 -71 0 84 -68 ous Sites May	Jun -20 0 160 -30 110	Jul 49 24 -53 -30 -11	Aug 43 24 -53 -24 -11	Sep 19 24 -53 0 -11 Sep	Oct 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nov 0 0 0 0 0 0 0 Nov	Dec 0 0 0 0 0 0 Dec	
VP export cuts otal Expenditures WP in SL (without Source Shift) VP in SL OD Storage OD Storage (non-S.L.) otal Incremental Storage Changes WP in SL (without Source Shift)	C/O 0.057 -0.202 0.398 0.000 0.253	Oct 0 0.000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nov 0 0.000 0 0 0 0	EWA Dec 0	A End-of-Mo	Onth Incre Feb	emental S Mar 0 0.202 0 0 0 ge Balance Mar 0	-12 Storage C Apr -12 0 0 0 -12 e at Vari Apr -12 -12 C C C C C C C C C	-71 ⁸ -152 Changes May -80 -71 0 84 -68 ous Sites May -93	Jun -20 0 160 -30 110 Jun -113	Jul 49 24 -53 -30 -11	Aug 43 24 -53 -24 -11 Aug -21	Sep 19 24 -53 0 -11 Sep -2	Oct 0 0 0 0 0 0 Oct -2	Nov	Dec 0 0 0 0 0 0 0 Dec -2	
VP export cuts otal Expenditures WP in SL (without Source Shift) VP in SL OD Storage OD Storage (non-S.L.) otal Incremental Storage Changes WP in SL (without Source Shift) VP SL	C/O 0.057 -0.202 0.398 0.000 0.253 C/O 0.057 -0.202	Oct 0 0.000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nov 0 0.000 0 0 0 0	EWA Dec 0.000 0 0 0 0 EWA Dec 0 -0.202	A End-of-Mo Jan 0 0.000 0 0 0 0 End-of-Mo Jan 0 -0.202	Onth Incre Feb	emental S Mar 0 0.202 0 0 0 0 ge Balanc Mar 0 0	-12 Storage C Apr -12 0 0 0 -12 e at Vari Apr -12 0 0	-71 ⁸ -152 Changes May -80 -71 0 84 -68 ous Sites May -93 -71	Jun -20 0 160 -30 110 Jun -113 -71	Jul 49 24 -53 -30 -11 Jul -64 -48	Aug 43 24 -53 -24 -11 Aug -21 -24	Sep 19 24 -53 0 -11 Sep -2 0	Oct 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nov	Dec 0 0 0 0	
VP export cuts otal Expenditures WP in SL (without Source Shift) VP in SL OD Storage OD Storage (non-S.L.) otal Incremental Storage Changes WP in SL (without Source Shift) VP SL OD Storage	C/O 0.057 -0.202 0.398 0.000 0.253 C/O 0.057 -0.202 0.398	Oct 0 0.000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nov 0 0.000 0 0 0 0 0 0	EW/ Dec 0 0.0000 0 0 0 EWA Dec 0 -0.202	A End-of-Mo Jan 0 0.0000 0 0 0 End-of-Mo Jan 0 -0.202 0.398	Onth Incr Feb	emental S Mar 0 0.202 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-12 storage C Apr -12 0 0 -12 e at Vari Apr -12 0 0 0 0 0 0 0 0 0	-71 ⁸ -152 Changes May -80 -71 0 84 -68 ous Sites May -93 -71 0	Jun -20 0 160 -30 110 Jun -113 -71 160	Jul 49 24 -53 -30 -11 Jul -64 -48 107	Aug 43 24 -53 -24 -11 Aug -21 -24 53	Sep 19 24 -53 0 -11 Sep -2 0 0	Oct 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nov	Dec 0 0 0 0	
VP export cuts otal Expenditures WP in SL (without Source Shift) VP in SL OD Storage OD Storage (non-S.L.) otal Incremental Storage Changes WP in SL (without Source Shift) VP SL	C/O 0.057 -0.202 0.398 0.000 0.253 C/O 0.057 -0.202	Oct 0 0.000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nov 0 0.000 0 0 0 0	EWA Dec 0.000 0 0 0 0 EWA Dec 0 -0.202	A End-of-Mo Jan 0 0.000 0 0 0 0 End-of-Mo Jan 0 -0.202	Onth Incre Feb	emental S Mar 0 0.202 0 0 0 0 ge Balanc Mar 0 0	-12 Storage C Apr -12 0 0 0 -12 e at Vari Apr -12 0 0	-71 ⁸ -152 Changes May -80 -71 0 84 -68 ous Sites May -93 -71	Jun -20 0 160 -30 110 Jun -113 -71	Jul 49 24 -53 -30 -11 Jul -64 -48	Aug 43 24 -53 -24 -11 Aug -21 -24	Sep 19 24 -53 0 -11 Sep -2 0	Oct 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Nov	Dec 0 0 0 0	

1879

1878

1665

1664

2004 NOD Purchases = 65(YCWA) + 10(PCWA). YCWA has firm 65 taf; can exercise options for an additional 120 taf. PCWA has firm 10 taf; can exercise options for an additional 10 taf.

2020

2020

Apr

1781

1768

May

1374

821

578

466

20

Sep

320

318

-11

335

332

-11

Aug

298

253

25

793

791

791

466

464

-11

Dec

1010

1010

788

788 0

650

650

C/O

Total Storage (base case)

MWD Source Shifting

Encroachment Total Storage (EWA case)

Storage (with MWD source shifting) 650 788 1010 1664 1878 2020 1768 1374 821 486 298 351 355 475

Aqueduct conveyance and evaporation losses are not included.
 Carriage water loss applies to water transfers from the Sacramento River (assumed to be 20% until modeling results indicate otherwise);

a 10% conveyance loss applies to water transfers from the San Joaquin River. Carriage water loss in WY 2003 was 0%.

The SWP spilled ~ 400 af of EWA water stored in Oroville during flood control operations.

⁴ 2004 YCWA Transfer (Joint place of use) ⁵ 2004 PCWA Transfer (Joint place of use)

⁶ 2004 SOD Transfers - 85 TAF from KCWA (SWP place of use)

⁷The SWP cost for VAMP and its shoulders are estimated to be 33 TAF and 60 TAF, respectively (based upon the SWP April studies).

⁸ The CVP cost for "shoulders" on VAMP is estimated to be 71 TAF (based upon the CVP April B2 studies).

⁹ Based upon DWR's 90% (75% Fall) allocation study (dated 4/2004) and the USBR's "April90b2" study (dated 4/14/04).

WY 2003/2004 EWA Accounting Summary Based upon April Operations Study - 50% Exceedance Hydrology Assumptions: SWP Allocation - 74%; NOD Purchases - 94 TAF; SOD Purchases - 160 TAF; MWD SS - 34 TAF EWA NOD and SOD Storage ((+ = Acquisitions) and (- = Releases)) Nov Apr Aug Sep Oct Nov Total NOD (Oroville) 0.398 -0.398 -31 ^{4 5} -31 ^{4 5} -31 ^{4 5} 94 45 NOD (YCWA/PCWA) Carriage Water Loss ² -6 -6 -6 -19 SOD (KCWA/SCVWD) 160 -50 ⁶ -60 -50 ⁶ SOD (MWD) EWA Asset Acquisition in SWP San Luis¹ C/O Oct Nov Dec May Jun Jul Aug Sep I/I Relaxation EWA share of SWP gain Project Pumping to reduce EWA debt

1 4 5

50 ⁶

50 ⁶

6 4 5

50 ⁶

6 4 5

Total Monthly EWA Assets		0	0	0	0	0	0	0	0	50	51	56	6	0	0	0	164
3	C/O	Oct	Nov	Dec	EWA Ass	et Acquis	ition in C\	/P San Lu	u is May	l Jun	I Jul	Aug	Sep	Oct	Nov	Dec	Total
E/I Relaxation Project Pumping to reduce EWA debt	5.0	360		200	Jun	. 65	0.202	, , pi	dy	Sun	Jui	, ag	200	301		200	0
JPOD using excess flows JPOD using NOD storage											24 45	19 ^{4 5}	19 ^{4 5}				0 61
Xfer NOD - Sacramento River ² Xfer NOD - San Joaquin River ²																	0
SOD CVP Surface/GW purchases Exchange of EWA assets											10 ⁶						10
Groundwater pumping Exchange from SWP to CVP in SL																	0
Total Monthly EWA Assets	0	0	0	0	0	0	0	0	0	0	34	19	19	0	0	0	72

	EWA Expenditures at the Export Pumps																
4	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP export cuts								-23 ⁷	-100 ⁷	-50							-173
CVP export cuts									-71 ⁸								-71
Total Expenditures	0	0	0	0	0	0	0	-23	-171	-50	0	0	0	0	0	0	-244
-																	

EWA End-of-Month Incremental Storage Changes																	
5	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP in SL (without Source Shift)	0.057	0	0	0	0	0	0	-23	-100	0	51	56	6	0	0	0	-9
CVP in SL	-0.202	0.000	0.000	0.000	0.000	0.000	0.202	0	-71	0	34	19	19	0	0	0	0
NOD Storage	0.398	0	0	0	0	-0.398	0	0	0	94	-31	-31	-31	0	0	0	0
SOD Storage (non-S.L.)	0.000	0	0	0	0	0	0	0	160	-50	-60	-50	0	0	0	0	0
Total Incremental Storage Changes	0.253	0	0	0	0	0	0	-23	-11	44	-6	-6	-6	0	0	0	-9

	EWA End-of-Month Storage Balance at Various Sites																
6	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
SWP in SL (without Source Shift)	0.057	0	0	0	0	0	0	-23	-123	-123	-72	-16	-9	-9	-9	-9	
CVP SL	-0.202	-0.202	-0.202	-0.202	-0.202	-0.202	0	0	-71	-71	-38	-19	0	0	0	0	
NOD Storage	0.398	0.398	0.398	0.398	0.398	0.000	0	0	0	94	63	31	0	0	0	0	
SOD Storage (non-S.L.)	0.000	0	0	0	0	0	0	0	160	110	50	0	0	0	0	0	
EWA Asset Balance	0.253	0	0	0	0	0	0	-23	-34	9	3	-3	-9	-9	-9	-9	

	San Luis Reservoir Storage Conditions																
7	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Total Storage (base case) 9		650	788	1010	1665	1879	2020	1791	1507	913	485	207	250	193	293	650	
Encroachment																	
Total Storage (EWA case)		650	788 0	1010	1664	1878	2020	1768	1312	719	375	173	241	184	283	640	
MWD Source Shifting											9	25	-9	-9	-9	-9	
Storage (with MWD source shifting)		650	788	1010	1664	1878	2020	1768	1312	719	384	207	266	201	292	640	

²⁰⁰⁴ NOD Purchases = 65(YCWA) + 10(PCWA). YCWA has firm 65 taf; can exercise options for an additional 120 taf. PCWA has firm 10 taf; can exercise options for an additional 10 taf.

JPOD using excess flows JPOD using NOD storage Xfer NOD - Sacramento River 2

Exchange of EWA assets Groundwater pumping SOD Exchange from CVP to SWP in SL

Kfer NOD - San Joaquin River 2 SOD SWP Surface/GW Purchases

Aqueduct conveyance and evaporation losses are not included.

²Carriage water loss applies to water transfers from the Sacramento River (assumed to be 20% until modeling results indicates otherwise);

a 10% conveyance loss applies to water transfers from the San Joaquin River. Carriage water loss in WY 2003 was 0%.

The SWP spilled ~ 400 af of EWA water stored in Oroville during flood control operations.

⁵ 2004 PCWA Transfer (Joint place of use) ⁴ 2004 YCWA Transfer (Joint place of use)

⁶²⁰⁰⁴ SOD Transfers - 125 TAF from KCWA (SWP place of use); 25 TAF from MWD (SWP place of use); and 10 TAF from SCVWD (CVP place of use)

⁷The SWP cost for VAMP and its shoulders are estimated to be 47 TAF and 76 TAF, respectively (based upon the SWP April studies).

⁸The CVP cost for "shoulders" on VAMP is estimated to be 71 TAF (based upon the CVP April B2 studies).

⁹ Based upon DWR's 50% (75% Fall) allocation study (dated 4/2004).